Health Update:

Influenza in Missouri, 2013-2014

January 31, 2014

This document will be updated as new information becomes available. The current version can always be viewed at http://www.health.mo.gov

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

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Health Update
January 31, 2014

FROM: GAIL VASTERLING
DIRECTOR

SUBJECT: Influenza in Missouri, 2013-2014

On December 26, 2013, the Missouri Department of Health and Senior Services (DHSS) issued a Health Advisory containing information on the current influenza season as well as recommendations on diagnostic testing and the use of antiviral drugs (http://health.mo.gov/emergencies/ert/alertsadvisories/pdf/HAd122613.pdf). This Health Update summarizes influenza activity in Missouri through late January, and provides information on how medical providers and facilities can access DHSS' Weekly Influenza Report.

Through the week ending January 25, 2014 (Week 4):

- Missouri is reporting widespread influenza activity*, with 14,856 influenza cases reported since the beginning of the 2013-2014 season. These cases represent all laboratory and aggregate influenza reports. (The actual numbers of persons with influenza exceed the numbers reported since not all infected individuals seek care and undergo testing.)

- A total of ten specimens were received by the Missouri State Public Health Laboratory (MSPHL) for viral testing during Week 4; two were positive for 2009 influenza A (H1N1) virus and eight were negative. The most common influenza subtype detected by MSPHL this season has been 2009 influenza A (H1N1) virus.

- There have been no reported outbreaks or school closures due to influenza-like illness (ILI) for the 2013-2014 season.

- No pediatric influenza-associated deaths have been reported during the 2013-2014 season.

- In Week 4, the statewide rate of ILI visits per total visits to hospital emergency rooms reported through the ESSENCE syndromic surveillance system was 2.7%. Northwest Region reported 2.0%, Central Region 2.7%, Eastern Region 2.1%, Southeast Region 3.6%, and Southwest Region 4.1%.

Medical providers should be aware that DHSS publishes a Weekly Influenza Report each Tuesday from early October through May. (The most recent report can be accessed at http://health.mo.gov/living/healthcondiseases/communicable/influenza/reports.php.) It provides a comprehensive assessment of influenza activity in the state, and contains aggregate influenza information at a county, regional, and state level. Selected influenza positive samples are tested for subtype by MSPHL, and results are shown in the report. DHSS currently utilizes ESSENCE, a syndromic surveillance system, to monitor trends in chief complaints among persons presenting to hospital emergency rooms throughout the state. ESSENCE data pertaining to ILI complaints are numerically and graphically shown in the report. The report also contains information from facilities enrolled in ILINet, which collects data on outpatient visits at participating locations throughout the state and calculates the fraction of patients presenting with ILI among all patients presenting to the facility during the surveillance week. Information on influenza outbreaks, rates of influenza and

pneumonia hospitalizations, and pediatric influenza deaths in the state is also included in the report, as are national influenza prevalence data from the Centers for Disease Control and Prevention (CDC).

Up-to-date reports on influenza activity nationwide are available from CDC at:
http://www.cdc.gov/flu/weekly/fluactivitysurv.htm

CDC recommendations on the use of influenza antiviral drugs are available at:
http://www.cdc.gov/flu/professionals/antivirals/index.htm

Influenza activity is likely to continue for some time. CDC and DHSS recommend that anyone aged 6 months and older who has not gotten influenza vaccine this season should be vaccinated now. All of this season's influenza vaccines include coverage for influenza A (H1N1) virus. Complete CDC recommendations on the use of influenza vaccines are available at:
http://www.cdc.gov/flu/professionals/vaccination/index.htm

DHSS has a website designed for medical providers and public health professionals that contains links to comprehensive information on seasonal influenza and its prevention and treatment. Go to:
http://health.mo.gov/emergencies/ert/med/seasonal.php

Questions regarding DHSS' weekly influenza report, as well as other influenza-related questions, can be directed to the department's Bureau of Communicable Disease Control and Prevention at 573/751-6113.

*Widespread influenza activity is defined as: increased influenza-like illness (ILI) and/or institutional outbreaks (ILI or laboratory confirmed) in at least half of the state's regions AND recent (within the past 3 weeks) laboratory confirmed influenza in the state.

Health Update:

CDC Considerations Related to Investigational Use of Intravenous Zanamivir for 2013-2014 Influenza Season

February 4, 2014

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Health Update
February 4, 2014

FROM: GAIL VASTERLING
DIRECTOR

SUBJECT: CDC Considerations Related to Investigational Use of Intravenous Zanamivir for 2013-2014 Influenza Season

The Centers for Disease Control and Prevention (CDC) has recently provided information, reproduced below, on intravenous (IV) zanamivir. There are, according to CDC, certain clinical situations where the use of IV zanamivir may be considered for patients with influenza. Because IV zanamivir is an investigational product, it is available only by enrollment in an ongoing clinical trial, or under an emergency investigational new drug (EIND) request to the manufacturer for use in hospitalized adult and pediatric patients with severe influenza. Included in the information below is how clinicians can make a request to determine a patient's eligibility for an ongoing clinical trial, or to use IV zanamivir under EIND if not able to enroll in an available clinical trial.

Intravenous Influenza Antiviral Medications and CDC Considerations Related to Investigational Use of Intravenous Zanamivir for 2013-2014 Influenza Season

Centers for Disease Control and Prevention January 30, 2014
http://www.cdc.gov/flu/professionals/antivirals/intravenous-antivirals.htm

Intravenous (IV) formulations have been developed for three neuraminidase inhibitor medications (oseltamivir, peramivir, zanamivir). However, IV peramivir and IV oseltamivir are currently not available via clinical trial, compassionate use, or Emergency Use Authorization.

IV Zanamivir: Background and Clinical Indications

Zanamivir is a neuraminidase inhibitor antiviral medication with the same mechanism of action as oseltamivir. The FDA-approved formulation of zanamivir is the inhaled dry powder (Relenza®) delivered via a diskhaler device, and its use is summarized elsewhere (Influenza Antiviral Medications: A Summary for Clinicians). IV zanamivir aqueous solution is an investigational product available only by enrollment in an ongoing clinical trial, or under an emergency investigational new drug (EIND) request to the manufacturer for use in hospitalized adult and pediatric patients with severe influenza.

- For the 2013-14 season (as of January 27, 2014) most tested influenza viruses have been susceptible to both oseltamivir and zanamivir; oseltamivir-resistant 2009 H1N1 viruses have been reported rarely to date.

- Enhanced surveillance for oseltamivir-resistant 2009 H1N1 viruses is ongoing.[1] While oseltamivir resistance among circulating U.S. influenza viruses is low to date, resistance can emerge during or after oseltamivir treatment in certain patients with prolonged influenza virus shedding (e.g., severely immunosuppressed patients, such as hematopoietic stem cell transplant recipients) [1-3]. Most oseltamivir-resistant H1N1 viruses have remained susceptible to zanamivir in laboratory testing thus far [4-6].

- Clinical trials of approved neuraminidase inhibitors, oral oseltamivir and inhaled dry powder zanamivir, have demonstrated some reduction in median time to symptom improvement when used for treatment of acute, uncomplicated influenza illness in otherwise healthy persons [7-16]. CDC has made recommendations below for other uses based on observational data [17-29] and on expert opinion.

- The efficacy and safety of IV zanamivir for treatment of patients hospitalized with severe influenza have not been established, but are currently being evaluated in clinical trials. In view of the limited alternatives, CDC recommends that investigational use of IV zanamivir may be considered for severely ill patients with oseltamivir-resistant 2009 H1N1 virus infection (Antiviral Drug Resistance among Influenza Viruses) [30-32].

- For hospitalized patients and patients with severe or complicated illness, CDC recommends treatment with oral oseltamivir. Limited data suggest that oseltamivir delivered by oral or nasogastric administration is generally well absorbed in critically ill influenza patients, including those in the intensive care unit, on continuous renal replacement therapy, and/or on extracorporeal membrane oxygenation [33-41]. There have been rare reports of patients with suspected decreased oral oseltamivir absorption because of decreased gastric motility or gastrointestinal bleeding [35, 40].

- For patients who cannot tolerate or absorb oral oseltamivir because of suspected or known gastric stasis, malabsorption, or gastrointestinal bleeding, the use of investigational IV zanamivir may be considered.

- Currently, phase III trials are evaluating the effectiveness of IV zanamivir compared to oral oseltamivir for treatment of patients hospitalized with severe influenza. At this time there is no evidence that an IV formulation of a neuraminidase inhibitor would be more effective than oral oseltamivir, especially if there are no concerns regarding absorption and oseltamivir resistance.

- Controlled clinical trials of oral oseltamivir and inhaled dry powder zanamivir generally enrolled patients with acute uncomplicated influenza illness within 2 days of illness onset. All neuraminidase inhibitor medications work best when administered early. While it is generally expected that treatment is most effective if initiated within 2 days of illness onset [7-22, 24, 27-29, 42-47], some studies suggest there may be benefit if initiated up to 4 or 5 days after illness onset [22, 23, 25, 26, 28, 48-55]. However, delay in treatment initiation may result in reduced effectiveness.

- Oseltamivir and zanamivir, either inhaled or IV, should not be administered together [56].

- Inhaled zanamivir (Relenza®) is not recommended for use in patients with severe influenza disease because of the lack of data. The inhaled dry powder formulation of zanamivir (Relenza inhalation powder) must not be made into an extemporaneous solution for administration by nebulization or mechanical ventilation [57, 58]. Relenza Inhalation Powder must only be administered using the device provided.

How to Evaluate Clinical Trial Eligibility or Submit a Request for an IV Zanamivir Emergency IND

Ongoing clinical trials can be located at www.ClinicalTrials.gov. A request to determine a patient's eligibility for an ongoing clinical trial, or use IV zanamivir under EIND if not able to enroll in an available clinical trial, may be made by contacting the GSK Clinical Support Help Desk via email (gskclinicalsupportHD@gsk.com) or by calling 1-877-626-8019 or 1-866-341-9160. Availability is 7 days a week, 24 hours/day, including holidays. The GSK Clinical Support Help Desk will assess eligibility for clinical trials, and will provide information and instructions on obtaining IV zanamivir (i.e.,

EIND process), and provide the Request for Patient Information Form that needs to be completed for FDA review if a patient is not eligible for enrollment in an ongoing clinical trial and the physician wishes to request an EIND.

The EIND paperwork does not need to be completed before contacting the FDA, so a requesting clinician should contact GSK first, and then quickly contact FDA. To contact FDA:

- During normal business hours (8:00 a.m. – 4:30 p.m. Eastern Time), please call DAVP at 301-796-1500 or email DAVPEINDREQUEST@fda.hhs.gov.

- After normal business hours (weekdays after 4:30 p.m. or before 8:00 a.m. Eastern Time; weekends or holidays), please call the FDA Emergency Coordinator at 1-866-300-4374 or 301-796-8240 or the CDER Emergency Coordinator at 301-796-9900.

[1] A subset of influenza viruses collected for national surveillance and additional specimens from public health and academic laboratories are tested for resistance to neuraminidase inhibitors, and results are shared with CDC. This information is presented in the antiviral resistance section of the FluView report. Testing for oseltamivir resistant viruses at CDC can be requested via state laboratories.

[In Missouri, influenza-related questions can be directed to the Missouri Department of Health and Senior Services' Bureau of Communicable Disease Control and Prevention at 573/751-6113. Access to comprehensive information and guidance for medical providers and public health professionals on seasonal influenza is available at http://health.mo.gov/emergencies/ert/med/seasonal.php.]

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Health Update:

Ebola Virus Disease (EVD)

October 16, 2014

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Health Update
October 16, 2014

FROM: GAIL VASTERLING
DIRECTOR

SUBJECT: Ebola Virus Disease (EVD)

On September 30, 2014, the Centers for Disease Control and Prevention (CDC) reported that the first case of travel-associated Ebola diagnosed in the United States had been confirmed in Dallas, Texas. Subsequently, two healthcare workers who had provided care for this patient also tested positive for Ebola. The Missouri Department of Health and Senior Services (DHSS) and local public health agencies continue to make preparations should a case of Ebola occur in Missouri. This Health Update provides clarification of certain epidemiologic risk factors for Ebola in order to assist clinicians in their assessment of patients for the disease.

Current guidance for evaluating persons for Ebola Virus Disease (EVD) is shown below. If, based on this guidance, an individual is found to be at risk for EVD, then the specified infection control measures must immediately be instituted, and hospital leadership, along with state and local public health officials, must immediately be notified. It is very important that these steps be consistently followed in all emergency departments and other medical settings.

Presently there are three countries of concern for Ebola transmission: Liberia, Sierra Leone, and Guinea. The United States and Spain have had localized transmission. The three U.S. cases were diagnosed in the Dallas area and have been investigated. Their contacts have been identified, and these contacts are being followed by public health authorities. Travel to, or residence in, the Dallas area (or anywhere else in the U.S.) is not a risk factor for Ebola. Likewise, travel to, or residence in, Spain is not a risk factor for the disease. Also, cases of Ebola had occurred in Nigeria and Senegal, but there is no evidence of current cases. Persons who entered Nigeria on or after September 30, 2014, or Senegal on or after September 20, 2014, are not at risk for exposure to Ebola.

Clinical and epidemiologic criteria for EVD are the following:

1. Clinical criteria include fever **and** additional signs/symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage;

AND

2. Epidemiologic risk factors within the **21-day period** before the onset of signs/symptoms include:

   a. residence in—or travel to—an area where EVD transmission is active (see above for the countries of concern as of October 16, 2014; because these may change over time, always go to http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html for the most recent information);

   b. contact with blood or other body fluids or human remains of a patient known to have or suspected to have EVD; **or**

   c. direct handling of bats, non-human primates, and other animals from disease-endemic areas or direct handling of unpreserved tissues from any of these animals.

If both criteria are met:

1. **IMMEDIATELY** move the patient to a private room with a bathroom, and institute STANDARD, CONTACT, and DROPLET precautions while further assessment occurs.

   AND

2. **IMMEDIATELY** report the patient to:
   a. Hospital leadership

      AND

   b. The Missouri Department of Health and Senior Services (DHSS) at 573/751-6113 or 800/392-0272 (24/7), **and** the local public health agency.

DHSS must be contacted before samples are obtained/submitted for Ebola testing.

Links to comprehensive information and clinical guidance on EVD are available at: http://health.mo.gov/emergencies/ert/med/hemorrhagic.php.

Links to CDC guidance on infection control and medical waste management are available at: http://health.mo.gov/emergencies/ert/med/hemorrhagic.php#infection.

Questions can be directed to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6113 or 800/392-0272 (24/7).

Health Update:

Ebola Virus Disease (EVD)

October 23, 2014

This document will be updated as new information becomes available. The current version can always be viewed at http://www.health.mo.gov

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

Health Alerts convey information of the highest level of importance which warrants immediate action or attention from Missouri health providers, emergency responders, public health agencies or the public.

Health Advisories provide important information for a specific incident or situation, including that impacting neighboring states; may not require immediate action.

Health Guidances contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

Health Updates provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

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Health Update
October 23, 2014

FROM: GAIL VASTERLING
DIRECTOR

SUBJECT: Update 2: Ebola Virus Disease (EVD)

This Health Update provides information on new guidance from the Centers for Disease Control and Prevention (CDC) on the use of personal protective equipment (PPE) by healthcare workers involved in the care of patients with Ebola virus disease (EVD). It also provides current guidance on submission of specimens for Ebola virus testing, and information on the monitoring of travelers arriving from Ebola-impacted countries in western Africa.

New CDC Guidance on PPE

On October 20, 2014, CDC issued *Guidance on Personal Protective Equipment To Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On (Donning) and Removing (Doffing)*. The guidance focuses on specific PPE that health care workers should use, and offers detailed step by step instructions for how to put the equipment on and take it off safely. Recent experience from safely treating patients with Ebola at Emory University Hospital, Nebraska Medical Center and National Institutes of Health Clinical Center is reflected in the document.

The guidance contains the following key principles:

1. Prior to working with Ebola patients, all healthcare workers involved in the care of these patients must have received repeated training and have demonstrated competency in performing all Ebola-related infection control practices and procedures, and specifically in donning/doffing proper PPE.
2. While working in PPE, healthcare workers caring for Ebola patients should have no skin exposed.
3. The overall safe care of Ebola patients in a facility must be overseen by an onsite manager at all times, and each step of every PPE donning/doffing procedure must be supervised by a trained observer to ensure proper completion of established PPE protocols.

Included in the guidance is the recommendation that healthcare workers caring for Ebola patients use a powered air-purifying respirator (PAPR) or an N95 or higher respirator in the event of an unexpected aerosol-generating procedure.

The guidance is available at http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html.

In addition, CDC has developed a related fact sheet which is found at http://www.cdc.gov/media/releases/2014/fs1020-ebola-personal-protective-equipment.html.

For links to additional information and guidance on infection control in health care settings, go to http://health.mo.gov/emergencies/ert/med/hemorrhagic.php#infection.

Submission of Specimens for Ebola Virus Testing

Recently, the Missouri State Laboratory (SPHL) has been approved to conduct Ebola testing by the CDC. Consultation with DHSS is required before samples can be collected and sent to the SPHL. Ebola samples must not be sent directly to the SPHL without DHSS consultation and approval. DHSS' Bureau of Communicable Disease Control and Prevention is available to consult on and approve the submission of samples at 573/751-6113 or 800/392-0272 (24/7).

Monitoring of Travelers Arriving from Ebola-Impacted Countries in Western Africa

The CDC announced that public health authorities will begin active post-arrival monitoring of travelers whose travel originates in Liberia, Sierra Leone, or Guinea. Post arrival monitoring is an added safeguard that complements the existing exit screening protocols, which require all outbound passengers from the affected West African countries to be screened for fever, Ebola symptoms, and contact with individuals infected with Ebola. These enhanced screening protocols will occur at the five U.S. airports that will now receive all travelers from the affected countries. Low risk asymptomatic travelers from these regions will be allowed to travel to their final point of destination in the U.S. Travelers will receive a CARE (Check And Report Ebola) kit at the airport that contains a tracking log and pictorial description of symptoms, a thermometer, guidance for how to monitor with thermometer, a wallet card on who to contact if they have symptoms and that they can present to a health care provider, and a health advisory infographic on monitoring of their health for three weeks. DHSS will be notified when a traveler is arriving in Missouri and will immediately notify Local Public Health authorities to coordinate health monitoring activities. Health monitoring of any travelers meeting these screening criteria will consist of temperature and symptoms evaluations, daily for 21 days.

Links to comprehensive information and clinical guidance on EVD are available at: http://health.mo.gov/emergencies/ert/med/hemorrhagic.php.

Questions can be directed to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6113 or 800/392-0272 (24/7).

Health Update:

Update 3: Hospital Preparedness for Patients with Possible or Confirmed Ebola Virus Disease (EVD)

December 24, 2014

This document will be updated as new information becomes available. The current version can always be viewed at http://www.health.mo.gov

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

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Health Update
December 24, 2014

FROM: GAIL VASTERLING
DIRECTOR

SUBJECT: **Update 3: Hospital Preparedness for Patients with Possible or Confirmed Ebola Virus Disease (EVD)**

The purpose of this Health Update is to describe the current process for assessing at-risk symptomatic persons for Ebola virus disease (EVD) in Missouri, to describe the appropriate packaging of a specimen for Ebola testing, and to provide clarification on the use of point of care (POC) equipment for the management of a known or suspected Ebola patient.

All healthcare providers should be aware of the current Ebola screening criteria, which are provided below in the Appendix.

Process for Evaluating Symptomatic Persons at Risk for EVD in Missouri

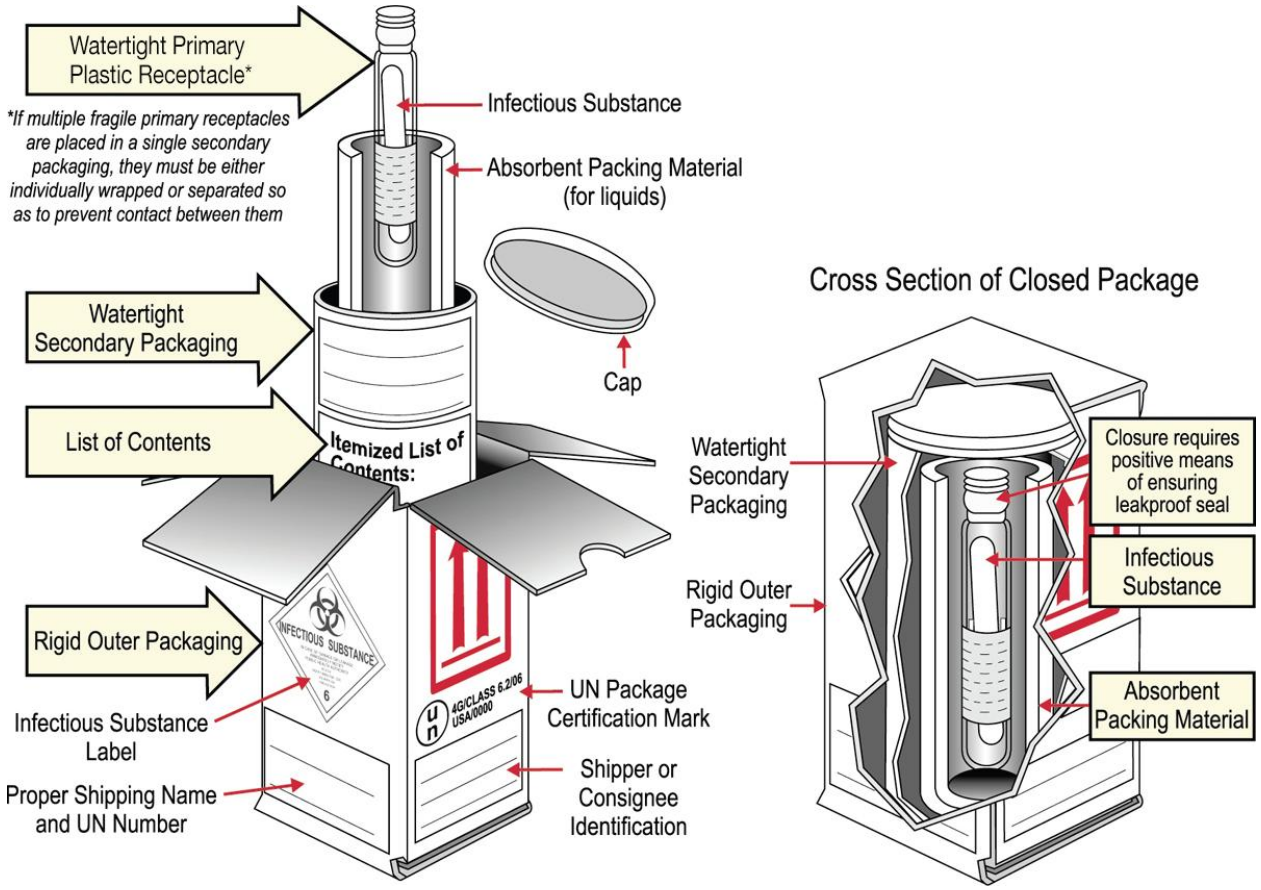
The current process utilized by the Missouri Department of Health and Senior Services (DHSS) for evaluating symptomatic persons at risk for EVD is the following.

Travelers who have recently returned to Missouri from one of the four Ebola-impacted countries in West Africa are being monitored for 21 days by public health officials. Currently, each traveler who is being monitored for Ebola in the state has been asked to pre-identify a specific health care facility where he/she will go for assessment should Ebola-compatible symptoms develop. State and local public health authorities will work to coordinate transport of the person to the pre-identified facility, should this become necessary.

In the event a monitored individual would require testing for Ebola, the Missouri State Public Health Laboratory (MSPHL) has developed a video that demonstrates the proper packaging of a specimen to be sent for Ebola testing. The video can be viewed at the following link: http://youtu.be/bhO1ahg55A8. This demonstration video should not be considered a substitute for the required certification to ship a Category A, infectious substance, and is meant to be used solely as a helpful depiction to aid in packaging the specimen. MSPHL reminds hospitals that packaging of potential Ebola virus specimens must also be done in accordance with CDC guidelines.

Once the specimen is packaged as demonstrated in the image on the next page, the collection kit should be placed inside a Styrofoam liner with freeze pillows and placed inside another protective outer box. The dimensions of the outermost box should not exceed 12x11x10 inches. Boxes exceeding these dimensions cannot be manipulated inside a biological safety cabinet with the sash at the proper level.

If your facility does not have shipping containers that meet these requirements, contact the DHSS' Emergency Response Center (ERC) at (800) 392-0272.



In any facility where assessment of a patient for EVD is occurring, it is extremely important to ensure there is no delay in the overall care of the individual by being prepared to accept, test, manage, and treat alternative etiologies of febrile illness (e.g., malaria, influenza) as clinically indicated.

Point of Care (POC) Testing

Point of Care (POC) testing is not required for the appropriate and safe treatment of a suspected or confirmed EVD patient. U.S. clinical laboratories can safely handle specimens from these potential Ebola patients by following all required precautions and practices in the laboratory, specifically those designed for pathogens spread in the blood. Additional information regarding specimen collection and testing is available at: http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html and http://www.cdc.gov/vhf/ebola/hcp/safe-specimen-management.html.

Considerations and Preparation for POC Testing

While POC testing is not required, if a facility should choose to consider this type of testing, several considerations and planning steps should be implemented in advance. Additional training specific to offering POC testing to a known or suspected EVD patient should be provided, and staff should, in advance of caring for such a patient, practice POC routine testing (such as traditional chemistry, hematology, and other laboratory testing used in the management of seriously ill patients) while wearing Ebola PPE. Changing to unfamiliar PPE, and/or using POC equipment while wearing this PPE, without sufficient training and practice may lead to gaps in safe practices. In addition, if equipment to perform the tests will need to be transferred to the POC location, the equipment should be pre-identified and plans made for how the equipment will be transported to the location. Also, potential Food and Drug

Administration (FDA) and/or Clinical Laboratory Improvement Amendments (CLIA) requirements should be evaluated by hospital personnel to ensure POC use for a critical care patient in this manner is consistent with all pertinent regulations and guidance.

Below is a list of possible POC routine tests for which there should be preparation in advance of caring for a known or suspected EVD patient. This should not be considered an exclusive listing and may be subject to change as a result of additional guidance.

- **iSTAT**
  - Hemoglobin, hematocrit
  - Blood Gases (pH, pCO2, PO2, TCO2, HCO3, Base excess, sO2)
  - International normalized ration (INR) coagulation (ACT Kaolin, ACT Celite, PT/INR)
  - Chemistry profiles (Na, K, Cl, tCO2, anion Gap, iCa, Glu, BUN, Crea, Lactate)
- **Binax**
  - Malaria
  - Alternative for Binax is thin smears, fixed in methanol, in clinical laboratory
- **Piccolo Xpress**
  - Complete metabolic profile (ALB, ALP, ALT, AST, BUN, Ca, Cl-, CRE, GLU, K+, Na+, TBIL, TCO2, TP)
  - Liver function enzymes (ALB, ALP, ALT, AMY, AST, GGT, TBIL, TP)
  - Device can be dedicated to EVD patient
- **Hematology analyzer**
  - CBC including platelet count and differential
- **Coagulation analyzer**
  - Prothrombin time
  - INR
- **Urinalysis dipsticks**

Links to comprehensive information and clinical guidance on EVD are available at: http://health.mo.gov/emergencies/ert/med/hemorrhagic.php.

Questions can be directed to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6113 or 800/392-0272 (24/7).

Appendix
Current Guidance for Evaluating Persons for Ebola Virus Disease (EVD)

Presently there are four West African countries of concern for Ebola transmission: Liberia, Sierra Leone, Guinea, and Mali. All travelers entering the United States from these countries are subject to a 21-day active post- arrival monitoring and movement protocol, with twice-daily temperature and symptom checks in coordination with state or local public health authorities.

Clinical and epidemiologic criteria for Ebola Virus Disease (EVD) are the following:

1. Clinical criteria include fever **and** additional signs/symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage;

AND

2. Epidemiologic risk factors within the **21-day period** before the onset of signs/symptoms include:
    a. residence in—or travel to—an area where EVD transmission is active (see above for the countries of concern as of November 10, 2014; because these may change over time, always go to http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html for the most recent information);
    b. contact with blood or other body fluids or human remains of a patient known to have or suspected to have EVD; **or**
    c. direct handling of bats, non-human primates, and other animals from disease-endemic areas or direct handling of unpreserved tissues from any of these animals.

If both criteria are met:

1. **IMMEDIATELY** move the patient to a private room with a bathroom, and institute STANDARD, CONTACT, and DROPLET precautions while further assessment occurs.

AND

2. **IMMEDIATELY** report the patient to:
    a. Hospital leadership

AND

    b. The Missouri Department of Health and Senior Services (DHSS) at 573/751-6113 or 800/392-0272 (24/7), and the local public health agency.

DHSS must be contacted before samples are obtained/submitted for Ebola testing.

For additional information and guidance, go to:
http://health.mo.gov/emergencies/ert/med/hemorrhagic.php#evaluation